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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/833,506	04/07/97	WEBBER	R 12842

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HM21/0508

EXAMINER

HUFF, S

ART UNIT

PAPER NUMBER

1642

DATE MAILED: 05/08/98

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

# Office Action Summary

Application No.  
08/833,506

Applicant(s)  
Webber

Examiner  
Sheela J. Huff

Group Art Unit  
1642



☒ Responsive to communication(s) filed on Feb 17, 1998

☒ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

## Disposition of Claims

☒ Claim(s) 1-21 is/are pending in the application.

Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

☐ Claim(s) \_\_\_\_\_ is/are allowed.

☒ Claim(s) 1-21 is/are rejected.

☐ Claim(s) \_\_\_\_\_ is/are objected to.

☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.

## Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been  
☐ received.

☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

☐ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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### DETAILED ACTION

1. Please direct all future communications to Technology Center 1600, Art Unit 1642.
2. Claims 1-21 are pending.

### *Continued Prosecution Application*

3. The amendment filed 2/17/98 requesting that the specification be amended to refer to the present Continued Prosecution Application (CPA) as a continuation application of Application No. 08/833506 has not been entered. As set forth in 37 CFR 1.53(d)(7), a request for a CPA is the specific reference required by 35 U.S.C. 120 to every application assigned the application number identified in such request. Thus, there is no need to amend the first sentence of the specification to refer back to the prior application and any such amendment shall be denied entry.

### *Sequence Listing*

4. This application contains sequence disclosures that are encompassed by the definitions for nucleotide and/or amino acid sequences set forth in 37 CFR 1.821(a)(1) and (a)(2). However, this application fails to comply with the requirements of 37 CFR 1.821 through 1.825 for the reason(s) set forth on the ~~attached~~ Notice To Comply With Requirements For Patent Applications Containing Nucleotide Sequence And/Or Amino Acid Sequence Disclosures. *The Notice to Comply was mailed with paper no. 2, mailed 9/17/97.*

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***Claim Rejections - 35 USC § 112***

5. Claims 1-21 remain rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. In claim 1, the terminology "regions of human iNOS" renders the claim vague and indefinite. What does applicant mean by "regions"? How many amino acids are there in a "region"? A similar problem is found in claims 8 and 21.

~~b.~~ Claim 1 is confusing because an immunoassay is used to detect an analyte not a "sample".

~~c.~~ In claims 1-2, the "specific binding entity" in an immunoassay must be an antibody (ie it cannot be an oligonucleotide etc) because then the assay would not be an immunoassay. Similar problems are found in claims 8-9 and 21. How are the oligonucleotides, polymers, etc used in the immunoassay? Is applicant trying to claim several different types of assays?

d. In claim 2, what does applicant mean by "polymers as artificial antibodies" and "phage display binding sites"? Polymers are polymers (organic compounds) not antibodies,

e. In claim 3, it is unconventional to refer to a part of a protein as a loci. Sequences is more conventional. The terminology "A-3" etc should be replaced by specific sequences, Similar problem is found in claim 10.

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~~f.~~ claim 4 contains an improper Markush group. A proper Markush group is selected from the group **consisting of**. Similar problem is found in claim 11.

~~g.~~ In claims 1, 6-8, 13-14 and 21 the terminology "revealing" is unconventional. The Examiner suggests using --detecting--.

h. In claim 8 it is not clear what applicant means by "mimics".

i. In claim 9, it is not clear what applicant means by "analogue".

j. In claim 21, what does applicant mean by "vehicle"?

k. Claims 5 and 12 are duplicates.

### ***Double Patenting***

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claims 1-21 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 8 and 13 of

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compending Application No. 08/634332. Although the conflicting claims are not identical, they are not patentably distinct from each other because both sets of claims are directed to immunoassays. The only difference between the two is that the specific binding entity of the instant invention can be other things in addition to an antibody.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1-7, 12, 18 and 21 remain rejected under 35 U.S.C. 102(b) as being anticipated by WO 94/23038 (Moncada et al ) or Kobzik et al Am. J. Respir. Cell Mol. Biol. vol. 9 p. 371 (1993) or Fujisawa et al J. Neurochemistry vol. 64 p. 85 (1995).

The WO discloses the use monoclonal antibodies directed against human iNOS in immunoassays to detect iNOS (pages 9-13) and hybridization assay (page 19). This reference discloses the sequence of human iNOS (Seq ID No 2) and this "comprises" many of the sequences found in figures 1 and 7-8.

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Kobzik et al disclose the use of polyclonal antibodies that recognize both iNOS and eNOS in immunoassays (abstract).

Fujisawa et al disclose the detection of human iNOS using anti-rat-iNOS by western blotting (abstract).

It is inherent that the monoclonals antibodies bind to the loci of claim 3.

10. Claims 1, 4-7, 12, 18 and 21 remain rejected under 35 U.S.C. 102(b) as being anticipated by Ikeda Tojo Medical Journal vol. 65 p. 433 (6/95).

Ikeda discloses the use of an antibody to iNOS in an immunohistochemical assay to determine the distribution of iNOS in patients (humans) with ulcerative colitis (abstract).

### ***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

13. Claims 1-2, 4-7, 12, 18 and 21 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Ikeda Tojo Medical Journal vol. 65 p. 433 (6/95) or Kobzik et al Am. J. Respir. Cell Mol. Biol. vol. 9 p. 371 (1993) or Fujisawa et al J. Neurochemistry vol. 64 p. 85 (1995).

Ikeda discloses the use of an antibody to iNOS in an immunohistochemical assay to determine the distribution of iNOS in patients (humans) with ulcerative colitis (abstract). As indicated on page 5 of the translation the polyclonal antibodies was prepared using 14 amino acids from the C-terminal side of iNOS (also see page 17-last full paragraph) and that after the blood was drawn the antibodies were "refined into an IgG using an antibody refinement column).

Kobzik et al and Fujisawa et al have been discussed above.

The only difference between the instant invention and the reference is the use of monoclonal antibodies.

It is well known that monoclonal antibodies are more specific than polyclonal antibodies that the use of monoclonals in assays gives greater sensitivity and specificity to an assay. Therefore, in view of the well known advantages of using monoclonals over polyclonals, it would have been obvious to one of ordinary skill in the



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art at the time of the invention to use monoclonal antibodies instead of polyclonal antibodies in the assays of the primary references.

### ***Conclusion***

14. No claim is allowed.
15. Claims 8-11, 13-17 and 19-20 are not necessarily free of art. No art was applied because it is not clear what applicant means by "mimics".
16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Billiar et al US 5658565 and Billiar et al US 5468630 are cited to show that DNA sequences for human iNOS are known and the detection of such sequences is also known.

Chartrain et al JBC vol. 269 p. 6765 (1994) is cited for the same reason.

17. This is a CPA. All claims are drawn to the same invention claimed in the earlier application and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered earlier. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action in this case. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no, however, event will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheela J. Huff whose telephone number is (703) 305-7866. The Examiner can normally be reached on Monday-Thursday from 6:30am to 3:00pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Lila Feisee, can be reached on (703)308-2731.

The FAX phone number for the group is (703)308-4242.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [lila.feisee@uspto.gov].

All Internet e-mail communications will be made of record in the application file.

**PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122.** This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703)308-0196.

Sheela J. Huff  
April 28, 1998



Sheela J. Huff  
Primary Examiner